CLAIMS

What is claimed is:

1. A manufacturing method for an electrophoretic display comprising:

performing a manufacturing process for a first board to coat an optical polymer material on an auxiliary substrate having a buffer layer and solidify the material by exposing ultraviolet rays;

performing a manufacturing process for a second board, after the optical polymer material being coated on the substrate having electrode patterns, an optical mask exposure being used for solidifying the polymerization material so as to form polymer walls, in holes surrounded by the polymer walls, a mixture composed of charged pigment particles and a few amount of optical polymer material being filled so as to accomplish the manufacturing of the second board;

performing the manufacturing process for combining the first board and the second board, the auxiliary substrate being aligned with the substrate for performing the exposure polymerization manufacturing process so as to combine the auxiliary substrate and the substrate, and

accomplishing the separation of the charged pigment particle solution from the polymerization material so as to make the charged pigment particle solution confined by the polymer, and stripping out the auxiliary substrate so as to form a single substrate electrophoretic display.

2. The manufacturing method for an electrophoretic display of claim 1, wherein the optical polymer material is photocurable resin.

3. The manufacturing method for an electrophoretic display of claim 1, wherein the auxiliary substrate or the substrate is a substrate made of material of glass, chip, Teflon or plastics.

4. The manufacturing method for an electrophoretic display of claim 3, wherein on the auxiliary substrate or the substrate, an light absorption or light reflection layer manufacturing process is performed for displaying.

5. The manufacturing method for an electrophoretic display of claim 1, wherein the electrode patterns are made of the material of electric conduction film.

6. The manufacturing method for an electrophoretic display of claim 5, wherein the electric conduction film is indium-tin oxide (ITO) or polyethylene-dioxithiophene (PEDOT).

7. The manufacturing method for an electrophoretic display

of claim 1, wherein the buffer layer is made of material of polyethylene hydrophobic material (PE/PEWax), long chain fatty acids , Silicone, Teflon.

8. The manufacturing method for an electrophoretic display of claim 1, wherein in the step of the manufacturing process for the first board, a step for manufacturing the electrode patterns on the auxiliary substrate is further comprised.

9. The manufacturing method for an electrophoretic display of claim 1, wherein in the manufacturing process for the second board, an optical mask exposure polymerization manufacturing process or a molding method can be used for making the polymerization material form the polymer walls.

10. The manufacturing method for an electrophoretic display of claim 9, wherein the molding method can be operated with one of a heating process and an irradiating ultraviolet rays so as to solidify and polymerize the optical polymer material.

11. The manufacturing method for an electrophoretic display of claim1, wherein the polymer wall formed by the optical polymer material is a closed matrix polymer wall.

12. The manufacturing method for an electrophoretic display of claim1, wherein the polymer wall formed by the optical

polymer material is a non-closed matrix polymer wall.

13. The manufacturing method for an electrophoretic display of claim 1, wherein the optical polymer material mixture is composed of the optical polymer material and the charged pigment particle solution.

14. The manufacturing method for an electrophoretic display of claim 13, wherein intervals are further added in the optical polymer material mixture.

15. A manufacturing method for an electrophoretic display comprising:

performing a manufacturing process for a first board to coat the optical polymer material on an auxiliary substrate having a buffer layer and solidify the material by exposing ultraviolet rays, and for manufacturing electrode patterns on the exposed and solidified optical polymer material layer;

performing a manufacturing process for a second board, after the optical polymer material coated on a substrate, the optical polymer material being solidified by exposing ultraviolet rays, electrode patterns being manufactured on the exposed and solidified optical polymer material layer, and then optical polymer material being coated on the layer again, an optical mask exposure being used for solidifying the polymerization material so as to

form polymer walls, in holes surrounded by the polymer walls, a mixture composed of charged pigment particles and a few amount of optical polymer material being filled so as to accomplish the manufacturing of the second board;

performing the manufacturing process for combining the first board and the second board, the auxiliary substrate being aligned with the substrate for performing the exposure polymerization manufacturing process so as to combine the auxiliary substrate and the substrate, and accomplishing the separation of the charged pigment particle solution from the polymerization material so as to make the charged pigment particle solution confined by the polymer, and stripping the auxiliary substrate from the substrate so as to form an electrophoretic display without substrate.

16. The manufacturing method for an electrophoretic display of claim 15, wherein the optical polymer material is photo-curable resin.

17. The manufacturing method for an electrophoretic display of claim 15, wherein the auxiliary substrate or the substrate is a substrate made of material of glass, chip, Teflon or plastics.

18. The manufacturing method for an electrophoretic display of claim 17, wherein on the auxiliary substrate or the

substrate, an light absorption or light reflection layer manufacturing process is performed for displaying.

19. The manufacturing method for an electrophoretic display of claim 15, wherein the electrode patterns are made of the material of electric conduction film.

20. The manufacturing method for an electrophoretic display of claim 19, wherein the electric conduction film is indium-tin oxide (ITO) or polyethylene-dioxithiophene (PEDOT).

21. The manufacturing method for an electrophoretic display of claim 15, wherein the buffer layer is made of material of polyethylene hydrophobic material (PE/PEWax), long chain fatty acids , Silicone, Teflon.

22. The manufacturing method for an electrophoretic display of claim 15, wherein in the step of the manufacturing process for the first board, a step for manufacturing the electrode patterns on the auxiliary substrate is further comprised.

23. The manufacturing method for an electrophoretic display of claim 15, wherein in the manufacturing process for the second board, an optical mask exposure polymerization manufacturing process or a molding method can be used for making the polymerization material form the polymer walls.

24. The manufacturing method for an electrophoretic display of claim 23, wherein the molding method can be operated with one of a heating process and an irradiating ultraviolet rays so as to solidify and polymerize the optical polymer material.

25. The manufacturing method for an electrophoretic display of claim15, wherein the polymer wall formed by the optical polymer material is a closed matrix polymer wall.

26. The manufacturing method for an electrophoretic display of claim15, wherein the polymer wall formed by the optical polymer material is a non-closed matrix polymer wall.

27. The manufacturing method for an electrophoretic display of claim15, wherein the optical polymer material mixture is composed of the optical polymer material and the charged pigment particle solution.

28. The manufacturing method for an electrophoretic display of claim27, wherein intervals are further added in the optical polymer material mixture.